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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,960	05/19/2006	Manfred Schuele	3631	1980

7590 11/23/2009
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103 East Neck Road
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EXAMINER

KOEHLER, CHRISTOPHER M

ART UNIT	PAPER NUMBER
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3726

MAIL DATE	DELIVERY MODE
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11/23/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/579,960	Applicant(s) SCHUELE ET AL.	
	Examiner Christopher M. Koehler	Art Unit 3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/6/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4, 5, 10, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Majic (US Pat No. 4,787,136).

Regarding claim 1, Majic discloses a method for producing a screw connection by means of a cutout screwdriver (10) that terminates a screw driving operation when a predetermined torque is achieved (column 1, lines 49-53), where data relating to the screw driving operation are detected (E2 actual values in figure 2) and evaluated by an evaluation circuit (35) being integrated (the evaluation circuit acts in concert with and is connected to the cutout screwdriver and therefore is integrated) in the cutout screwdriver and transmitted to an external monitoring unit (15, column 1, lines 53-61).

Regarding claim 2, Majic discloses the monitoring unit (38) receives the transmitted data and evaluates them with regard to predetermined limit values, and, when the predetermined limit values are not met, then an error message is generated (column 7, lines 61-66; column 8, lines 16-21).

Regarding claim 4, Majic discloses a torque sensor in the cutout screwdriver detects a current torque and transmits it to the evaluation circuit (column 1, lines 45-48 and lines 57-61).

Regarding claim 5, Majic discloses the evaluation circuit, based on the achievement of a desired torque, determines whether a correct screw driving operation has been executed (column 1, lines 57-65; column 7, lines 61-67; column 8, lines 9-15).

Regarding claim 10, Fig. 1 and 2 of Majic discloses that the evaluation circuit (35) is coupled to the monitoring unit (38) (column 6, lines 36-43).

Regarding claim 14, Majic discloses a cutout screwdriver equipped with a transmitter/receiver (12/15) unit for executing the method.

Regarding claim 15, Majic discloses a cutout screwdriver (10) comprising an evaluation circuit (35) being integrated in the cutout screwdriver (the evaluation circuit acts in concert with and is connected to the cutout screwdriver and therefore is integrated); and an external monitoring unit (15, 38), wherein the evaluation circuit detects and evaluates data relating to an operation of the cutout screwdriver (column 1, lines 53-61), and then transmits the evaluated data to the external monitoring unit (38, see figure 2).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 9, 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Majic (US Pat No. 4,787,136) in view of Totsu (US Pub No. 2004/0050566 A1).

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Regarding claim 3, Majic discloses evaluating the data with respect to a tolerance range (column 1, lines 57-68). It is noted that Majic does not specifically disclose the cutout screwdriver is deactivated. However, Totsu discloses the cutout screwdriver is deactivated upon exceeding a predetermined parameter value (paragraph [0004], lines 6-13). Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to deactivate the screwdriver of Majic after data lies outside a desired tolerance range, as taught by Totsu, as the screwdriver would need to stop for allowing a workpiece to be removed from the production line to an adjustment station as disclosed in Majic (column 1, lines 65-68).

Regarding claim 9, Majic discloses the limit values for the data transmitted from the evaluation circuit are stored in the monitoring unit (38), with which the transmitted data are compared and evaluated (column 7, lines 32-37 and lines 39-42), and when limit value criteria are not met, the monitoring unit sends the cutout screwdriver a signal (i.e. a "not good" signal; column 8, lines 16-24). It is noted that Majic does not specifically disclose that the signal causes the supply of current to the cutout screwdriver to be interrupted. However, Totsu discloses that a received signal causes the supply of current to the cutout screwdriver to be interrupted (i.e. when the limit criteria is not met for instance, when it goes over, the overload is detected and results in shutting the supply of current to the motor, thereby shutting down the screwdriver; paragraph [0004], lines 6-13). Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made, in addition to using a signal that signifies a "not good" signal as disclosed in Majic, to also send a signal that interrupts the current

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supply to a screwdriver thereby deactivating it, as taught by Totsu, as the screwdriver would need to stop for allowing a workpiece to be removed from the production line to an adjustment station as disclosed in Majic (column 1, lines 65-68)

Regarding claim 11, Majic discloses the cutout screwdriver has a transmitter/receiver system (column 4, lines 4-9). It is noted that Majic does not specifically disclose it is able to interrupt a supply of current to the cutout screwdriver. However, Totsu discloses a transmitter/receiver system that is able to interrupt a supply of current to the cutout screwdriver in response to an overload (i.e. "not good") signal (paragraph [0004], lines 6-13). Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to interrupt a supply of current to the screwdriver of Majic, in the instance when the screw driving operation yielded a "not good" signal, as taught by Totsu, as the screwdriver would need to stop for allowing a workpiece to be removed from the production line to an adjustment station as disclosed in Majic (column 1, lines 65-68)

Regarding claim 12, Majic discloses the monitoring unit has a transmitter/receiver system that is able to receive data transmitted from the evaluation circuit (column 7, lines 61-67). It is noted that Majic does not specifically disclose sending a deactivation signal to the cutout screwdriver. However, Totsu discloses sending a deactivation signal to the cutout screwdriver once a predetermined torque has been reached (paragraph [0027], lines 5-10). Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a signal in Majic that indicates

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when a predetermined torque has been reached, as taught by Totsu, to prevent overtightening of the screw

Regarding claim 13, Majic discloses the monitoring unit has an evaluation unit in which the data transmitted from the evaluation circuit are stored, compared with limit values for the transmitted data, and evaluated (column 7, lines 61-67), and when limit value criteria are not met, the evaluation unit sends the cutout screwdriver a signal (i.e. a "not good" signal; column 8, lines 16-24). It is noted that Majic does not specifically disclose a control unit interrupts the supply. However, Totsu discloses a control unit to interrupt the supply of current in the cutout screwdriver upon exceeding a predetermined parameter value (i.e. thereby deactivating the screwdriver; paragraph [0004], lines 6-13; paragraph [0027], lines 5-10; paragraph [0030], lines 8 and 9). Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the signal that signifies a "not good" signal as disclosed in Majic to also send a signal that interrupts the current supply to the screwdriver thereby deactivating it, as taught by Totsu, as the screwdriver would need to stop for allowing a workpiece to be removed from the production line to an adjustment station as disclosed in Majic (column 1, lines 65-68)

5. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Majic (US Pat No. 4,787,136) in view of Setton et al. (US Pub. No. 2003/0173096 A1).

Regarding claim 6, Fig. 2 of Majic discloses an evaluation circuit (35). It is noted that Majic does not specifically disclose detecting the number of screw driving

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operations per screw driving cycle. However, Setton et al. disclose in an electronically controlled screwdriver an evaluation circuit that detects the number of screw driving operations (i.e. rotations) per screw driving cycle, the rotations being indicative of the torque applied (i.e. as the driven part is in contact with the screw, it also indicates the revolutions of the screw; paragraph [0024], line 3 and paragraph [0027], lines 15-19). Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to also monitor the number of revolutions of the screw of Majic to indicate if the amount of torque generated is within the preset limits, as taught by Setton et al., to provide a secondary means for monitoring the torque during the screw driving operation.

Regarding claim 8, Fig. 2 of Majic discloses an evaluation circuit (35). It is noted that Majic does not specifically disclose detecting the current consumption and/or voltage drop during a screw driving operation. However, Setton et al. discloses in an electronically controlled screwdriver an evaluation circuit that detects the current consumption and/or voltage drop during a screw driving operation (i.e. in this instance, a current consumption is detected by the current limiting device; paragraph [0031], lines 5-9). Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to detect if there is a current consumption in Majic, as taught by Setton et al., since a greater amount of current is drawn from the motor as the torque increases, due to the relationship that $(\text{current})(\text{voltage}) = \text{torque} (2\pi)(\text{rotational speed})$.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Majic (US Pat No. 4,787,136) in view of Bitzer (US Pat. No. 4,571,696).

Regarding claim 7, Fig. 2 of Majic discloses an evaluation circuit (35). It is noted that Majic does not specifically disclose detecting the duration of the screw driving procedure. However, Bitzers discloses in an electronically controlled screwdriver a circuit that detects the duration of the screw driving procedure (column 2, lines 8-10). Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to include means to measure the duration of the screw driving procedure on the evaluation circuit disclosed in Majic, as the duration of the procedure can be preset, and as disclosed in Bitzer, when the preset torque value is reached, a preset time will start counting until it is reached, and the screw driving operation (which should be complete) is then evaluated (column 1, lines 37-44; column 2, lines 8-10).

Response to Arguments

7. Applicant's arguments filed 7/10/2009 have been fully considered but they are not persuasive.

8. Applicant argues that the evaluation circuit of Majic is not integrated in the cutout screwdriver. While the examiner agrees that the evaluation circuit is not physically and completely contained within the body of the cutout screwdriver, the limitation that the "evaluation circuit [be] integrated in the cutout screwdriver" is met in Majic because the evaluation circuit acts in concert with and is connected to the cutout screwdriver and therefore is integrated therein. Furthermore, the fact that the control unit 15 which comprises the cable 12 is connected to the cutout screwdriver by the cable 12 is sufficient to assert that the control unit and thus the evaluation circuit, while external, are integrated in the cutout screwdriver by the cable 12 contained therein.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Koehler whose telephone number is (571)272-3560. The examiner can normally be reached on Mon.-Fri. 7:30A-4:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. M. K./
Examiner, Art Unit 3726

/DAVID P. BRYANT/
Supervisory Patent Examiner, Art Unit 3726